



PART IV

Appendices

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Appendix A – Acronyms & Glossary



Appendix A Acronyms & Definitions

Acronyms

ATRS	American Textile Recycling Service
BOFA	Batteries, Oil, Paint and Antifreeze recycling)
C&D	Construction & Demolition
CA	Civic Associations
CEO	Chief Executive Officer
CY	Calendar Year
ESC	Environmental Service Center
ETJ	Extra Territorial Jurisdiction
FEMA	Federal Emergency Management Agency
FTE	Full Time Equivalent
FY	Fiscal Year
GBRC	Green Building Resource Center
HARC	Houston Advanced Research Center
H-GAC	Houston – Galveston Area Council
HH	Households
HHW	Household Hazardous Waste
HOA	Homeowner Association
HPD	Houston Police Department
kWh	Kilowatt-hour
MATF	Mayor’s Advisory Task Force
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
NA	Not Applicable
PCD	per capita per day
SF	Single Family
TCEQ	Texas Commission on Environmental Quality
TPD	Tons per Day
TPY	Tons per Year
TS	Transfer Station



TxDOT Texas Department of Transportation

UP Union Pacific

Glossary

Brush	Cuttings or trimmings from trees, shrubs, or lawns and similar materials.
Collection system	The total process of collecting and transporting solid waste. It includes storage containers; collection crews, vehicles, equipment, and management; and operating procedures. Systems are classified as municipal, contractor, or private.
Commercial solid waste	All types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.
Compost	The stabilized product of the decomposition process that is used or sold for use as a soil amendment, artificial topsoil, growing medium amendment, or other similar uses.
Composting	The controlled biological decomposition of organic materials through microbial activity.
Construction or demolition waste--	Waste resulting from construction or demolition projects; includes all materials that are directly or indirectly the by-products of construction work or that result from demolition of buildings and other structures, including, but not limited to, paper, cartons, gypsum board, wood, excelsior, rubber, and plastics.
Disposal	The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste (whether containerized or uncontainerized) into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwater.
Facility	All contiguous land and structures, other appurtenances, and improvements on the land used for the storage, processing, or disposal of solid waste.
Garbage	Solid waste consisting of putrescible animal and vegetable waste materials resulting from the handling, preparation, cooking, and consumption of food, including waste materials from markets, storage facilities, handling, and sale of produce and other food products.
Hazardous waste	Any solid waste identified or listed as a hazardous waste by the administrator of the United States Environmental Protection Agency under the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, 42 United States Code, §§6901 <i>et seq.</i> , as amended.
Household waste	Any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas); does not include brush.
Industrial solid waste	Solid waste resulting from or incidental to any process of industry or manufacturing, or mining or agricultural operations.



Landfill	A solid waste management unit where solid waste is placed in or on land. Landfills identified in this Plan are subject to TCEQ regulations related to location restrictions, design, operations, closure and post-closure care.
Municipal solid waste	Solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities, including garbage, rubbish, ashes, street cleanings, dead animals, abandoned automobiles, and all other solid waste other than industrial solid waste.
Municipal solid waste facility	All contiguous land, structures, other appurtenances, and improvements on the land used for processing, storing, or disposing of solid waste. A facility may be publicly or privately owned and may consist of several processing, storage, or disposal operational units, e.g., one or more landfills, surface impoundments, or combinations of them.
Post-consumer waste	A material or product that has served its intended use and has been discarded after passing through the hands of a final user. For the purposes of this subchapter, the term does not include industrial or hazardous waste.
Processing	Activities including, but not limited to, the extraction of materials, transfer, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal, including the treatment or neutralization of waste, designed to change the physical, chemical, or biological character or composition of any waste to neutralize such waste, or to recover energy or material from the waste, or render the waste safer to transport, store, dispose of, or make it amenable for recovery, amenable for storage, or reduced in volume.
Recyclable material	<p>A material that has been recovered or diverted from the nonhazardous waste stream for purposes of reuse, recycling, or reclamation, a substantial portion of which is consistently used in the manufacture of products that may otherwise be produced using raw or virgin materials. Recyclable material is not solid waste. However, recyclable material may become solid waste at such time, if any, as it is abandoned or disposed of rather than recycled, whereupon it will be solid waste with respect only to the party actually abandoning or disposing of the material.</p> <p>For Houston residents, recyclable materials include:</p> <ul style="list-style-type: none">▪ Aluminum foil and pie plates and tin cans (must be clean)▪ Cardboard▪ Newspaper▪ Phone books▪ Paperboard, e.g. cereal and tissue boxes▪ Office paper, junk mail, envelopes and junk mail▪ Shredded paper is not acceptable
Recycling	A process by which materials that have served their intended use or are scrapped, discarded, used, surplus, or obsolete are collected, separated, or processed and returned to use in the form of raw materials in the production of new products. Except for mixed municipal solid waste composting, that is, composting of the typical mixed solid waste stream generated by



residential, commercial, and/or institutional sources, recycling includes the composting process if the compost material is put to beneficial use.

- Sludge (biosolids)** Any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water-supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.
- Solid waste** Garbage, rubbish, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations and from community and institutional activities.
- Source-separated recyclable material** Recyclable material from residential, commercial, municipal, institutional, recreational, industrial, and other community activities, that at the point of generation has been separated, collected, and transported separately from municipal solid waste (MSW), or transported in the same vehicle as MSW, but in separate containers or compartments.
- Special waste** Any solid waste or combination of solid wastes that because of its quantity, concentration, physical or chemical characteristics, or biological properties requires special handling and disposal to protect the human health or the environment. If improperly handled, transported, stored, processed, or disposed of or otherwise managed, it may pose a present or potential danger to the human health or the environment.
- Transfer Station** A facility used for transferring solid waste from collection vehicles to long-haul vehicles (one transportation unit to another transportation unit). It is not a storage facility such as one where residents can dispose of their wastes in bulk storage containers that are serviced by collection vehicles.
- White goods** Discarded large household appliances such as refrigerators, stoves, washing machines, or dishwashers.
- Yard waste** Leaves, grass clippings, yard and garden debris, and brush, including clean woody vegetative material not greater than six inches in diameter, that results from landscaping maintenance and land-clearing operations. The term does not include stumps, roots, or shrubs with intact root balls.



Appendix B – Facility Maps & Tables

City Recycling Facilities and Depositories

Material Recovery Facilities

Composting Facilities

Transfer Stations

Landfills



Figure B-1 – Recycling Centers and Neighborhood Depositories (Source: City of Houston)

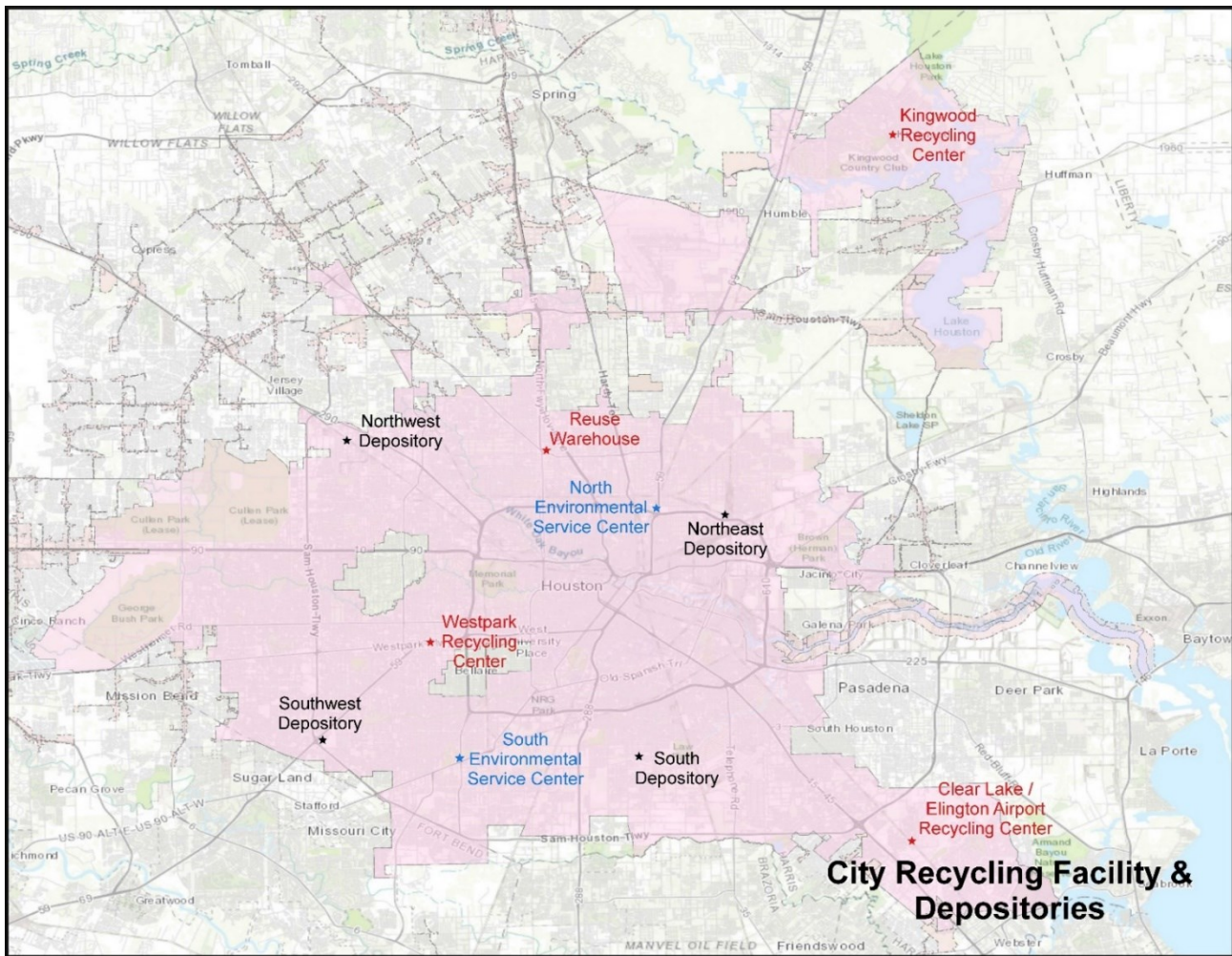


Table B-1 Drop-Off Location Materials (Tons)		
	CY 2017	CY 2018
Neighborhood Depositories		
North	459.15	482.36
Northwest	265.74	227.81
Northeast	132.16	136.60
South	88.21	65.61
Southwest	148.39	113.88



Table B-1 Drop-Off Location Materials (Tons)		
	CY 2017	CY 2018
Southeast	126.79	138.17
City Recycling Centers		
Westpark Recycling Center	1,261.09	629.54
Clear Lake/Ellington Airport	481.23	232.78
Kingwood Recycling Center	359.54	291.81
Total (Tons)	3,322	2,319

Table B-2 Reuse Warehouse Donations, 2017 & 2018 (in Pounds)		
	CY 2017	CY 2018
Bitumen	3,148	40,880
Cardboard	42,021	20,000
Ceramic	28,483	19,683
Concrete	179,219	170,561
Doors	34,315	45,302
Glass	33,883	17,876
Masonry	185,542	209,863
MEP	25,224	52,765
Metal	185,271	53,670
Miscellaneous	4,804	3,995
Plastic	409,014	31,063
Soil	45,785	178,471
Wood	208,166	144,598
Total (Pounds)	1,384,875	988,727



Table B-3		
Chemical Swap Shop Materials Reused/Recycled (in Pounds)		
	FY 2016	FY 2017
All Materials Collected¹	871,569	854,004
Total # of Customers²	5,433	5,408
Material Reused/Recycled		
Antifreeze	16,648	8,557
Bandit Signs	28,800	20,149
Batteries	4,288	13,974
Cardboard	11,580	7,020
Cooking Oil	18,550	20,690
Electronics Collections	70,795	60,855
Motor Oil	33,169	31,483
Plastic Buckets	-	-
Reuse Books	722	1,701
Reuse Chemicals	17,964	18,467
Reuse Paint ¹	85,957	84,871
Scrap Metal	61,802	38,069
Shredco Paper ³	-	4,600
Tires	5,244	3,418
Total (Pounds)	355,519	313,854
% of Materials Reused/Recycled	40.79%	36.75%



**Table B-4
MRF Capacity in H-GAC Region**

MRF	Address	Owner	2017 Tons Recovered	Capacity Throughput
Gasmer MRF	4939 Gasmer Drive Houston	WM	78,000	120,000
Houston Clay Road MRF	9590 Clay Road Houston	WM	105,000	204,000
Westside (Brittmore) MRF	1200 Brittmore Road Houston	WM	87,000	120,000
Global Waste Services	7172 E Mt Houston Road Houston	WCA	na	na
Houston Sort Center	5757 B Oates Road Houston	Republic	37,580	50,000 tpy
Independent Texas Recyclers	6810 Irvington Boulevard Houston	Independent Texas Recyclers	na	na
FCC	9170 Ley Road Houston	FCC	Opened March 2019	145,000 tpy



Figure B-2 Regional Recycling Centers (Source: H-GAC)

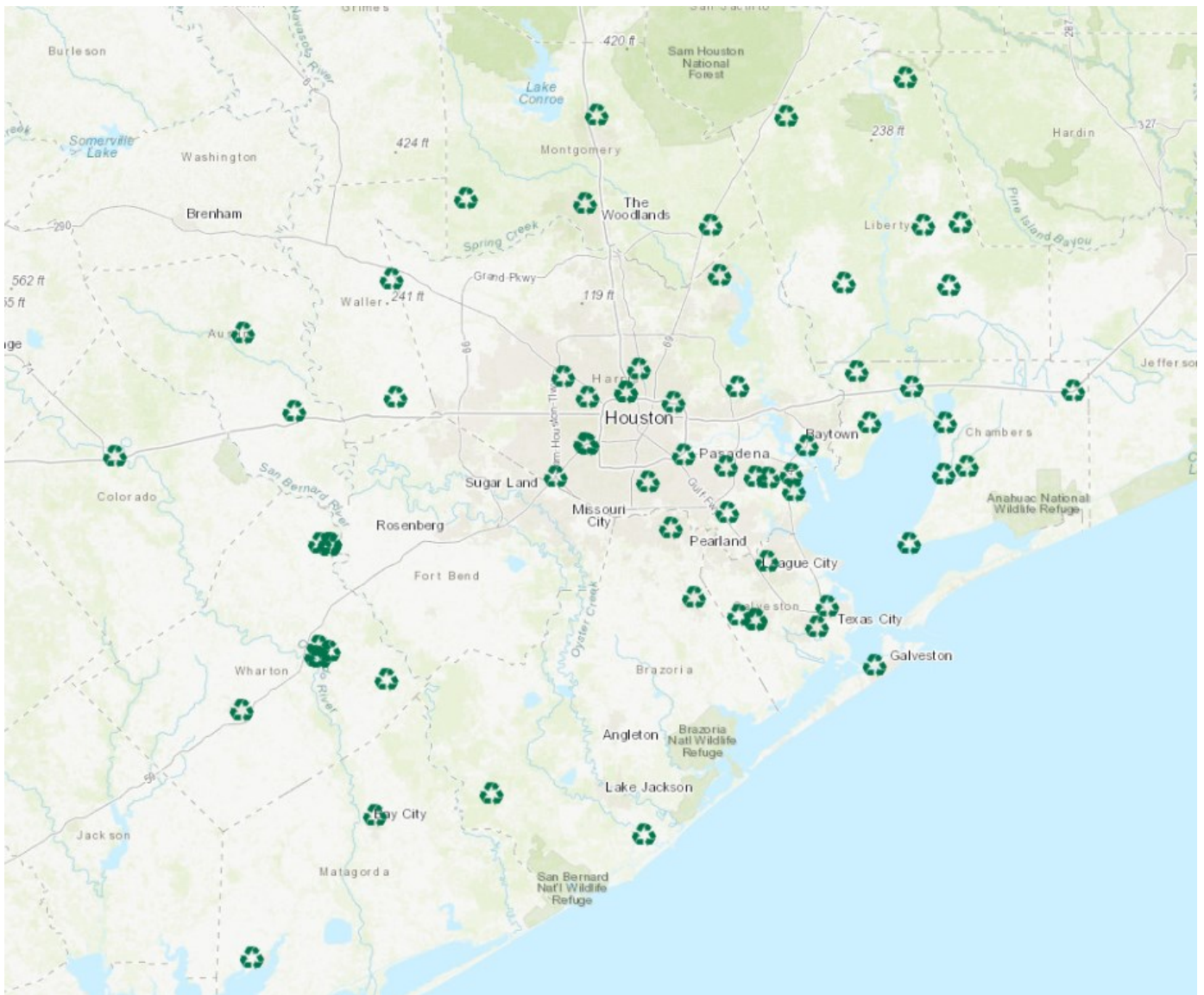
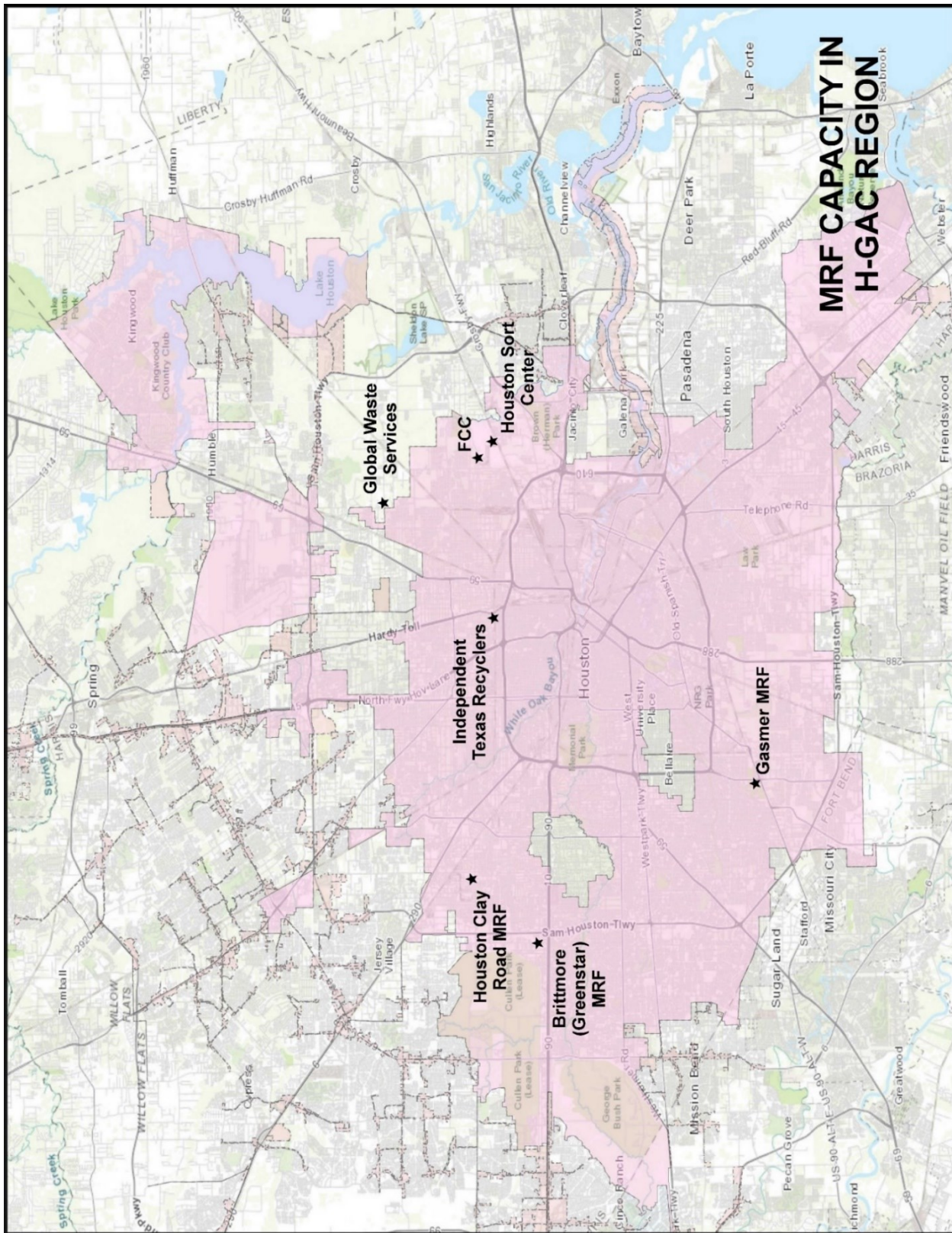




Figure B-3 Material Recovery Facilities (Source: TCEQ)





**Table B-5
Organics and Capacity of Major Facilities**

		Throughput (Tons/yr)	Capacity (Tons/yr)
In Houston			
	Living Earth/Letco (7 sites)		375,000
	The Ground Up		100,000
	Lone Star Disposal		5,000
	Farm Dirt Compost		1,000
	Total In Houston	>235,000	481,000
Outside Houston			
	New Earth (2 sites)		350,000
	Nature's Way		50,000
	Living Earth/LETCO (7 sites)		375,000
	WMI Coastal Plains		40,000
	Don Tal		NA
	Kirsch		NA
	Total Outside Houston	>613,500	>815,000



Figure B-5 Living Earth Facilities (Source: Living Earth)





**Table B-6
H-GAC Transfer Stations**

Name		2011 (TPY)	2015 (TPY)	2016 (TPY)	2017 (TPY)	Permitted Capacity (TPD)	2017 (TPD)
1	Houston SW Transfer Station	311,435	292,856	271,317	244,213	2,000	783
2	Houston NW Transfer Station	162,482	226,364	220,391	217,157	2,000	696
3	Houston SE Transfer Station	194,793	219,022	229,169	241,632	2,000	774
	City Transfer Station Total	668,710	738,242	720,877	703,002	6,000	2,253
4	Egbert Transfer Station	53,420	56,282	66,579	65,010	800	208
5	Excell Type V Transfer Station	43	17,515	14,622	12,110	1,000	39
6	Hardy Road Transfer Station	242,425	405,600	440,999	444,048	2,500	1,423
7	Koenig Street Transfer Station	107,954	157,777	145,461	123,166	2,500	395
8	Lone Star Recycling & Disposal	-	199,982	262,705	284,473	6,000	912
9	Ruffino Hills Transfer Station	218,146	422,691	407,809	389,326	2,000	1,248
10	R&J Transfer Station	-	-	-	4,598	125	15
11	Sam Houston Recycling Center TS	76,210	169,183	151,202	179,600	1,500	576
12	Sprint Recycling Center NE	25,723	128,800	20,450	19,473	1,000	62
13	Tanner Road TS	23,076	54,961	67,998	60,499	2,200	194
	Houston Private Sector TS	746,997	1,612,791	1,577,825	1,582,303	19,625	5,071
	City TS Total + Private Sector TS	1,415,707	2,351,033	2,298,702	2,285,305	25,625	7,325
14	Mid America Contractors	0	0	0	16,411	NA	45
15	City of Deer Park Transfer Station	-	16,092	18,254	17,541	NA	56
16	City of Galveston Transfer Station	80,765	90,163	94,891	97,560	NA	313
17	City of Hempstead TS	0	126	68	89	NA	
18	City of Huntsville Transfer Station	0	0	0	42,570	NA	136
19	Matagorda County TS	5,702	5,462	6,628	6,704	NA	21
20	City of Weimar	0	0	0	36,997	NA	118
21	Country Waste Inc.	8,747	7,959	6,540	6,451	NA	21
	Outside Houston TS Total	95,214	119,803	126,381	224,323		711
	Total Transfer Station	1,510,921	2,470,836	2,425,083	2,509,628		8,036

Note: Totals for Houston transfer stations may vary from Table 6-1 due to differences in reporting periods.



**Table B-6 (cont.)
Permitted Transfer Stations – Not Operational**

	Name	Permit Status	Not Constructed or Inactive	County
22	Ralston Road TS	Issued	Not Constructed	Harris
23	Tall Pines TS	Issued	Not Constructed	Harris
24	Nexus Material Recovery & TS	Issued	Not Constructed	Harris
25	Holmes Road TS	Issued	Not Constructed	Harris
26	GW TS	Issued	Not Constructed	Harris
27	FCC Materials Recovery Facility*	Issued	Opened in March 2019	Harris
28	City of Sealy Transfer Station	Issued	Inactive	Austin
29	Sprint Fort Bend County TS	Issued	Inactive	Fort Bend
30	Gulfwest Waste Solutions TS	Issued	Not Constructed	Chambers
31	K2 Waste Solutions	Issued	Not Constructed	Liberty
32	Pintail Landfill TS	Issued	Not Constructed	Waller

Source: TCEQ *FCC is permitted as a transfer station; however, it will function as an MRF. Became operational in March 2019.



Figure B-6 Regional Transfer Stations (Source: TCEQ)

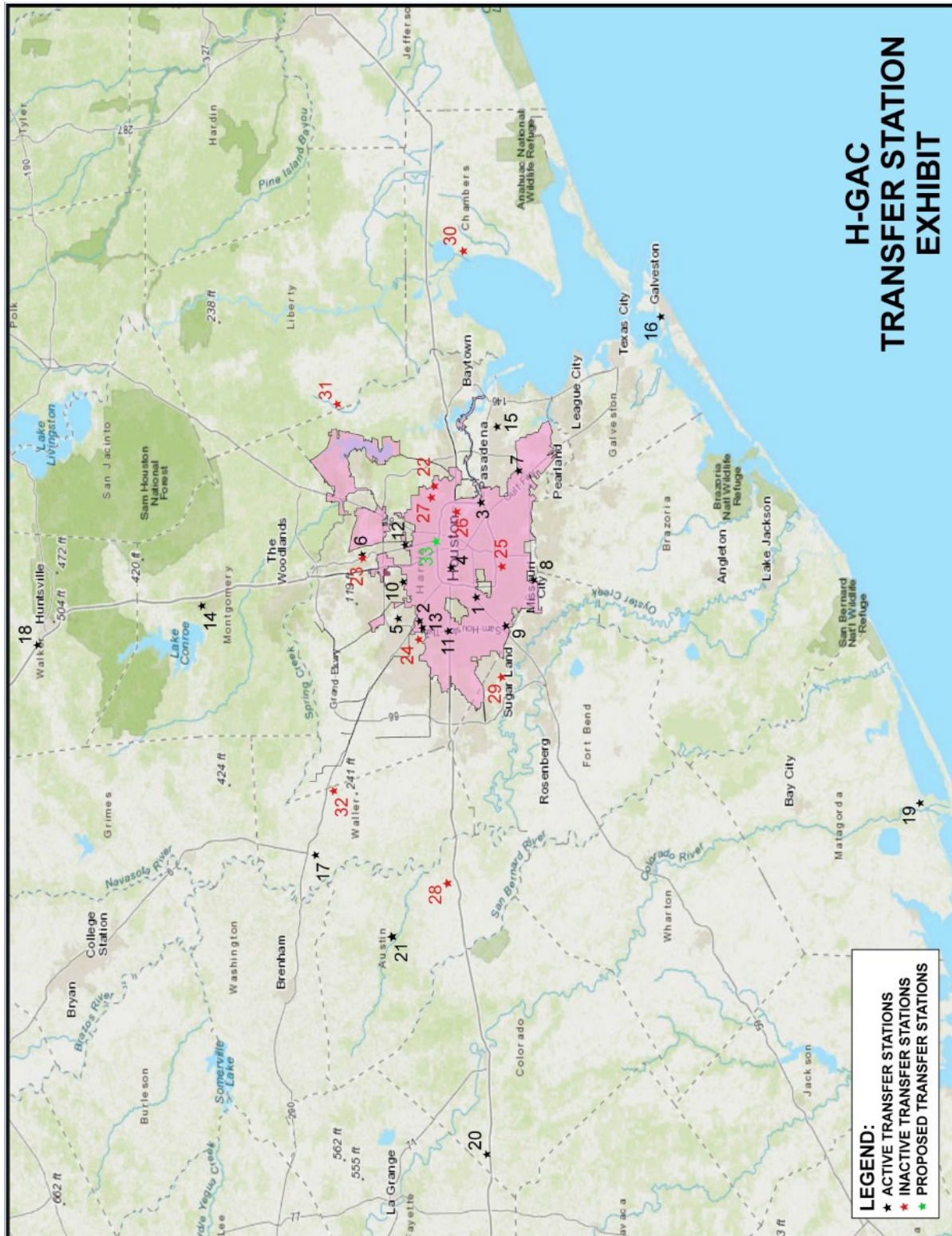
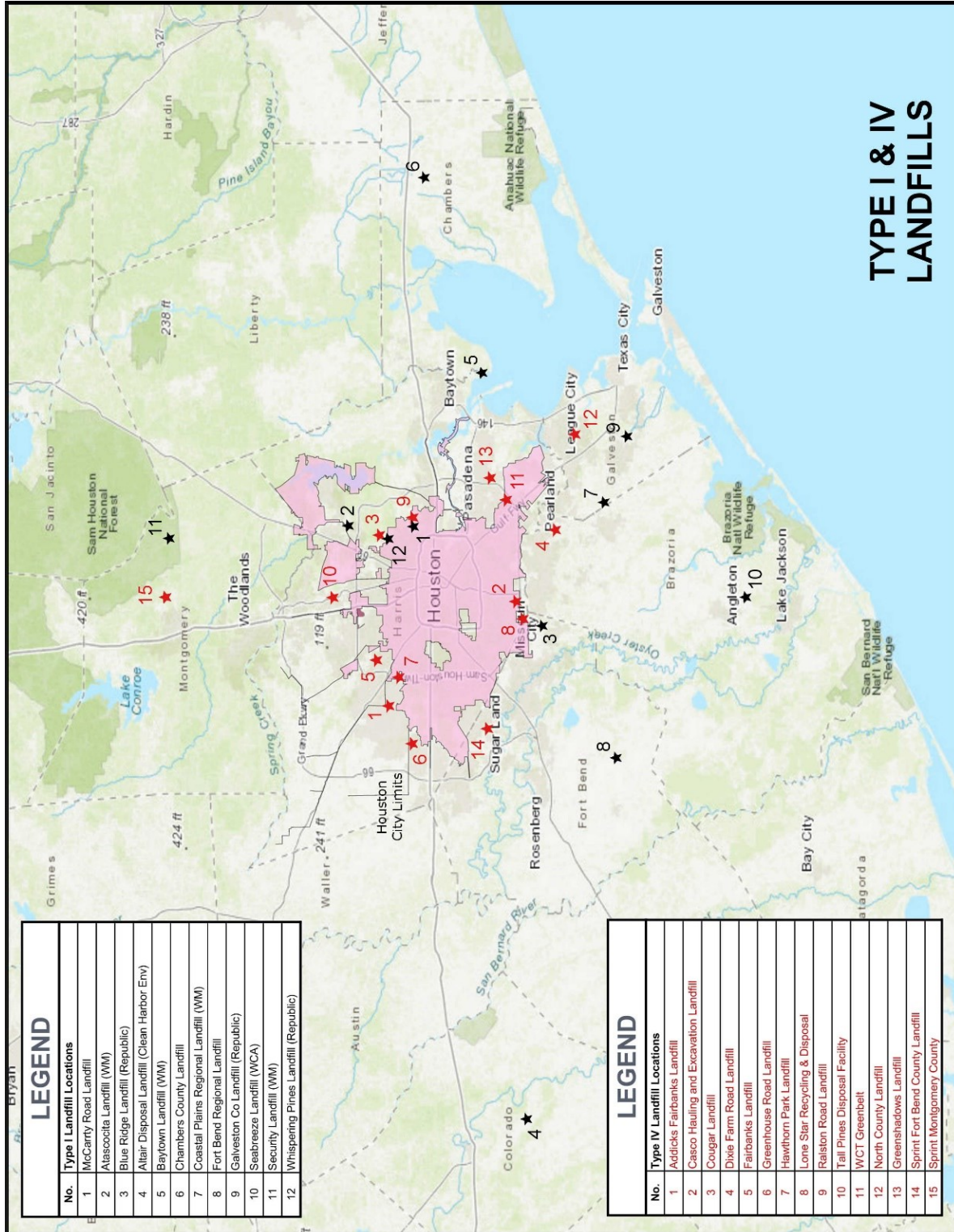




Figure B-7 Regional Landfills (Source: TCEQ)





**Table B-7
Type I Landfills – Ownership & Capacity**

Landfill	Owner	Remaining Capacity Tons	Remaining Capacity Cubic Yards	Remaining Capacity Years (2017)
McCarty Road	Republic	23,748,385	21,472,319	16
Atascocita	Waste Management of Texas	29,228,482	38,458,529	24
Blue Ridge	Blue Ridge Landfill TX, LP	87,275,249	142,373,978	88
Houston Primary Landfills		140,252,116	202,304,826	37
Altair Disposal Services Landfill	Altair Disposal Services, LLC	221,083	368,471	5
Baytown Landfill	USA Waste of Texas Landfills, Inc.	7,076,882	8,958,079	23
Chambers County	Chambers County	10,481,597	17,469,329	402
Coastal Plains Recycling and Disposal Facility	Waste Management of Texas	11,459,041	12,062,148	22
Fort Bend Regional Landfill	Fort Bend Regional Landfill, LP	31,476,496	35,973,138	29
Galveston County Landfill	Galveston County Landfill TX LP	27,813,032	37,084,042	53
Seabreeze Environmental Landfill	Seabreeze Recovery Inc.	18,667,822	21,334,654	28
Security Landfill RDF	TX LFG Energy, LP	9,350,389	12,848,470	24
Whispering Pines Landfill	Whispering Pines Landfill Tx, LP	10,902,299	10,902,299	10
Houston Secondary Landfills		127,448,641	157,000,630	40
Total*		267,700,757	359,305,456	37



**Table B-8
Type I Landfills – Annual Throughput**

Historical Throughput	2010	2015	2016	2017	2018	2010% Market Share	2018% Market Share
McCarty Road	1,793,086	1,426,088	1,116,310	1,364,814	1,619,174	30%	23%
Atascocita	939,804	1,242,928	1,253,621	1,209,440	1,248,556	16%	17%
Blue Ridge	516,629	1,060,899	1,176,325	1,244,016	1,115,761	9%	16%
Subtotal	3,249,519	3,729,915	3,546,256	3,818,270	3,983,491	55%	56%
Altair Disposal Services Landfill	37,786	34,708	54,897	48,629	48,764	1%	1%
Baytown Landfill	343,409	314,510	289,103	315,000	259,473	6%	4%
Chambers County	30,753	22,690	22,901	26,091	41,960	1%	1%
Coastal Plains Recycling and Disposal Facility	523,005	421,864	456,613	521,025	455,410	9%	6%
Fort Bend Regional Landfill	567,146	1,012,929	1,076,624	1,080,773	1,282,304	10%	18%
Galveston County Landfill	258,025	403,513	357,493	393,882	154,927	4%	2%
Seabreeze Environmental Landfill	546,014	487,123	523,376	686,618	571,974	9%	8%
Security Landfill RDF	372,515	408,828	447,184	364,400	315,401	6%	4%
Whispering Pines Landfill	48	30	20	24	41,248	0%	0%
Subtotal	2,678,701	3,106,195	3,228,211	3,436,442	3,171,461	45%	44%
Total	5,928,220	6,836,110	6,774,467	7,254,712	7,154,952	100%	100%



**Table B-9
Type IV Landfill Capacity**

Landfill	Address	Tons of Capacity	Cubic Yards of Capacity	2017 Tons	Years Remaining Capacity
Addicks Fairbanks Landfill	6415 Addicks Fairbank Rd, Houston	47,633	75,608	56,929	1
Casco Hauling and Excavation Landfill	1306 E Anderson Rd, Houston	549,300	1,220,007	97,147	5.7
Cougar Landfill	8601 Mount Houston Rd., Houston	44,119	63,050	16	4
Dixie Farm Road Landfill	4649 Dixie Farm Road	817,564	1,858,100	48,519	17
Fairbanks Landfill	8205 Fairbanks N Houston Rd, Houston	13,029,083	17,751,880	176,600	37
Greenhouse Road Landfill	3510 Greenhouse Road, Houston	4,113,628	5,484,837	124,622	21
Greenshadows Landfill	70 Jana Lane, Pasadena, TX	2,141,828	2,549,795	101,900	19
Hawthorn Park Landfill	10550 Tanner Road, Houston	0	0	16	4
Lone Star Recycling & Disposal	4107 S Sam Houston Pkwy, Houston	5,479,259	10,958,517	303,486	16.1
North County Landfill	2015 Wyoming Street, League City	2,423,923	3,689,381	20	50
Ralston Road Landfill	6632 John Ralston Road, Houston, TX	1,092,410	1,456,546	127,157	3.5
Sprint Fort Bend County Landfill	16007 W Bellfort, Sugar Land	7,258,243	13,904,680	307,236	24
Sprint Montgomery County	17851 Highway 105 E, Conroe	20,292,681	40,585,362	8,857	50
Tall Pines Disposal Facility	18710 E Hardy Rd, Houston	1,318,835	1,758,447	344,369	3
WCT Greenbelt	600 Old Genoa Red Bluff Rd, Houston	2,215,513	2,954,017	155,381	12
Total		60,824,019	104,310,227	1,852,255	32



**Table B-10
Historic Type IV Disposal Rates**

Name	2010	2015	2016	2017	2018
Addicks Fairbanks Landfill	45,536	100,600	129,328	56,929	32,953
Casco Hauling and Excavation Landfill	30,255	64,255	83,589	97,147	105,009
Cougar Landfill	114,201	16	16	16	1,423
Dixie Farm Road Landfill	34,574	42,092	48,961	48,519	123,599
Fairbanks Landfill	4	16	53,813	176,600	349,005
Greenhouse Road Landfill	54,066	107,114	123,931	124,622	171,287
Greenshadows Landfill	91,443	108,350	110,199	101,900	132,147
Hawthorn Park Landfill	109,034	201,177	151,350	16	12
Lone Star Recycling & Disposal	102,449	249,208	323,610	303,486	431,611
North County Landfill	12,304	30	24	20	51,442
Ralston Road Landfill	65,623	119,002	114,814	127,157	135,654
Sprint Fort Bend County Landfill	240,543	333,444	339,836	307,236	336,377
Sprint Montgomery County				8,887	255,269
Tall Pines Disposal Facility	223,881	338,122	316,931	344,369	425,407
WCT Greenbelt	162,006	144,883	135,280	155,381	240,888
Total	1,285,919	1,808,309	1,931,682	1,852,285	2,792,082



Appendix C MATF Polling

Table C-1 What are top 5 solid waste management issues? (use 5 dots and sticky notes for items not on the table)						
Issue (1 – most significant / 5 least significant)	1	2	3	4	5	
Disposal capacity is running out	2	1	3	1	1	26
Increasing consumerism and increased generation per capita		1	1		1	8
Insufficient program funding	12		1		1	64
Labor and fleet issues		4	1	1		21
Environmental impacts of waste disposal	1			1		7
MSW impacts on climate change		1		2		8
Recycling and organics market availability	2				1	11
Need for greater residential waste diversion			1	2		7
Lack of diversion in the commercial sector					2	2
Increased frequency and impacts of severe storms		2	3		1	18
Lack of Product Producer Responsibility	1					5
Difficulty in recycling materials due to packaging trends						0
Illegal Dumping			2	4	1	15
Others (describe on sticky note and rank)		1				4
Partnership with private sector						0
Contamination Education					6	6
Equity	1					5
Points	5	4	3	2	1	

The top five issues were:

1. Insufficient Program Funding
2. Disposal Capacity running out
3. Labor and Fleet Issues
4. Increased frequency of storms
5. Illegal dumping



Table C-2 What are the biggest risks (biggest concerns for the future) for the City's solid waste program? (use 5 dots and sticky notes for items not on the table)						
Risk (1 – most significant / 5 least significant)	1	2	3	4	5	
Running out of disposal capacity	7	3	1	2	1	55
Inability to collect garbage because of fleet		2	2	1		16
No markets for recyclable materials	5			2	2	31
No markets for compost						0
Inability to provide all services due to insufficient funding	11	1	4	1		73
Storm event (flooding / hurricane)	1	1	1	1	2	16
Inability to collect garbage because of staff availability		2	2	2	1	19
Landfill closures		1				4
Worsening traffic conditions		2	1	1	1	14
Points	5	4	3	2	1	

The five major risks identified by the Task Force were:

1. Inability to provide all service due to insufficient funding
2. Running out of landfill capacity
3. No market for recyclable materials
4. Inability to collect garbage because of staff availability
5. Storm events and Inability to collect garbage because of fleet issues



Table C-3					
The City relies solely on the General Fund for funding operations and new truck purchases which is providing insufficient funding for the sustainability of the Solid Waste Department. How willing are you to support the recommendation for a monthly residential user fee?					
	Strongly Support	Support	Neutral	Disagree	Strongly Disagree
How willing are you to support the recommendation for a monthly residential user fee?	9	3			

All members of the CTF supported a monthly residential fee for solid waste services. There was discussion during the topic that for many services that are provided by the City that certain services are available to single-family residents and multi-family residents. These services include access to depositories and recycling centers. Also, programs such as illegal dumping clean-up benefit the broader community, not just residents of single family households.

Table C-4					
If you are willing to support a user fee, how much would you be willing to pay on a monthly basis for your City provided solid waste and recycling services?					
	Lower than \$18	\$18.00 per month (Current - via General Fund)	\$18.01 - \$23.00 per month	\$23.01 - \$28.00 per month	More than \$28.01 per month for expanded services
How much would you be willing to pay on a monthly basis for your City provided solid waste and recycling services?	1		6	4	1



Table C-5

**Prioritize potential initiatives the City should consider for source reduction, reuse, recycling and diversion.
Each attendee receives 10 dots to place next to initiatives they most support.**

The City Should:	
Develop alternative markets	20
Lead by example through expanding the City guidelines on source reduction, reuse, recycling efforts for all City agencies and offices	5
Lead by example through expanding the City purchasing/procurement guidelines to expand on source reduction, reuse, recycling requirements for City service and product providers	7
Expand education/promotion on source reduction, reuse, recycling for residents, including working with non-profits and private sector to leverage existing efforts	17
Include more information regarding environmental impacts in City education materials (e.g. upstream decisions for consumers)	5
Implement a “green building code” to require source reduction, reuse and recycling initiatives, including C&D, for new construction or renovation projects	4
Add additional materials to recycling programs (e.g. textiles)	2
Adopt mandatory residential recycling ordinance, with strict code enforcement to issue citations for placing recyclables in garbage containers	9
Use Code enforcement at the curb to issue citations for contamination in recycling containers, and instruct collection vehicle operators to leave the recycling container unemptied if tagged for contamination	13
Implement a Pay-as-You-Throw curbside collection system where setting out more garbage costs more, setting out less garbage costs less	4
Add more drop off locations for recyclables, chemicals and electronics	9
Add more collection events for household hazardous wastes	6
Expand types of materials collected and reused in City-operated reuse of materials beyond current building materials, electronics and chemicals	1
Implement a voluntary technical assistance program to assist <u>multifamily complexes</u> in setting up on-site recycling programs	1
Implement a voluntary technical assistance program to assist <u>businesses</u> in setting up on-site recycling programs	3
Adopt a mandatory recycling ordinance for <u>multifamily complexes</u> , with phased in compliance (education, then strict compliance)	6
Adopt a mandatory recycling ordinance for <u>businesses</u> , with phased in compliance (education, then strict enforcement)	5
Implement reporting requirements to better track private sector recycling	3
Establish more informative data management systems to better track trends and provide more transparent and useful data	5

Programs that received the highest rankings included:

1. Development of alternative markets for recycled materials
2. Use Code enforcement at the curb to issue citations for contamination in recycling containers, and instruct collection vehicle operators to leave the recycling container unemptied if tagged for contamination
3. Expand education/promotion on source reduction, reuse, recycling for residents, including working with non-profits and private sector to leverage existing efforts.
4. Add more drop off locations for recyclables, chemicals and electronics
5. Adopt mandatory residential recycling ordinance, with strict code enforcement to issue citations for placing recyclables in garbage containers



Table C-6
MATF members were given the opportunity to place up to 5 Dots on the table.

Organics	
Encourage diversion from the landfill of biosolids generated at City wastewater treatment plants to processing facilities	12
Encourage use of locally produced compost, mulch and soil blends outside City projects	5
Increase number and availability of manned brush/tree waste drop off locations	2
Provide greater support and expand availability of Master Composter program to build support of organics diversion, and for public education	9
Lead by example by encouraging use of locally produced compost, mulch and soil blends at City projects and facilities	7
Collect residential food residuals with yard waste and address appropriate processing capacity – requiring a third cart	2
Enforce current ordinance prohibiting placement of grass clippings in city collection carts	3
Encourage development of additional organics processing capacity within the City for a broader range of food residuals, and biosolids	4
In coordination with local health department, encourage food recovery to feed the hungry	3
Adopt a mandatory recycling ordinance for <u>organics collection</u> , with phased in compliance (education, then strict compliance)	4

The major program priorities related to organics included the following:

1. Encourage diversion from the landfill of biosolids generated at City wastewater treatment plants to processing facilities
2. Provide greater support and expand availability of Master Composter program to build support of organics diversion, and for public education
3. Lead by example by encouraging use of locally produced compost, mulch and soil blends at City projects and facilities
4. Encourage use of locally produced compost, mulch and soil blends outside City projects



Table C-7 Based on your personal experience – what is the City doing well and what needs most improvement? Use one dot per row.						
City Activity	Doing Great	Good	Average	Needs Improvement	Needs significant Improvement	5 great 1 Need SI
Garbage Collection	4	4	1			4.3
Recycling Collection		3	5	3		3.0
Yard Waste Collection		1	6			3.1
Junk Waste Collection			5	1	1	2.6
Tree Waste Collection			6			3.0
Environmental Service Centers		2	1	2	2	2.4
Illegal Dumping Clean-up			1	3	5	1.6
Depositories, Recycling Centers		1	3	7	1	2.3
Public Information		2	2	4	3	2.3
Points	5	4	3	2	1	

Table C-8 What do you consider major issues related to disposal capacity?				
Challenges	Very Significant	Significant	Not a Concern	Score
MSW Landfill capacity being 30-40 years	4	4		20
C&D Landfill capacity being 20-30 years	5	3		21
City has no control over new capacity	3	2	1	14
Anticipated cost increases of disposal	5	2		19
Selecting sites for new landfills	9	1		29
Environmental justice related to new facilities	4	2	1	17
Environmental impacts of landfills	3	4	1	18
Distances waste will have to be hauled when close-in landfills reach capacity	8	2		28
Points	3	2	1	

Major issues related to landfills for the CTF included:

1. Selecting sites for new landfills
2. Distances waste will have to be hauled when close-in landfills reach capacity
3. C&D Landfill capacity being 20-30 years.
4. MSW landfill capacity being 30-40 years.
5. Anticipated cost increases of disposal
6. Environmental impacts of landfills



Table C-9 What are top 5 solid waste management issues? ((STAFF Responses) (use 5 dots and sticky notes for items not on the table)						
Issue (1 – most significant / 5 least significant)	1	2	3	4	5	Score
Disposal capacity is running out	0	1	4	3	1	23
Increasing consumerism and increased generation per capita						0
Insufficient program funding	8	1				44
Labor and fleet issues		7				28
Environmental impacts of waste disposal				1		2
MSW impacts on climate change						0
Recycling and organics market availability			1			3
Need for greater residential waste diversion			1	1	2	7
Lack of diversion in the commercial sector			1	1		5
Increased frequency and impacts of severe storms						0
Lack of Product Producer Responsibility				2		4
Difficulty in recycling materials due to packaging trends					1	1
Illegal Dumping	1		1	1	4	14
Others (describe on sticky note and rank)						
Points	5	4	3	2	1	



Appendix D Organizational Responsibilities

The following describes the responsibilities of each division of the SWMD related to implementation of the Plan.

Department Management

- Department management
- Support, i.e. accounting and billing
- Contract management
- Human resources management
- Policy development
- Coordination with key stakeholders
- Disaster management
- Route selection
- Public information / education programs*
- Response to 311 calls
- Planning*

**responsibilities moved to new Planning and Outreach Division*

Maintenance Division

- Maintains the Department's facilities/sites
- Provides leadership and administrative resources need to maintain vehicle equipment
- Maintenance repair services as well as fuel for operations
- Facility inspections

Operations Centers Division

- Collection planning
- Collection services to residents
- Special services as required by Management, City Council, Mayor
- Daily equipment and staffing assignments
- Route management
- Code enforcement responsibilities
- Reporting to management
- Illegal dumping collection



Proposed Planning & Outreach Division

- Project Planning
- Landfill Monitoring & New Site Development
- Minimization & Recycling Grant Administration
- Public Outreach
- Waste Minimization Program Management
- Recycling Program Management
- Organics Program Management
- Program Performance Evaluations